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SHORT REPORT

Malignant Fibrous Histiocytoma Masquerading as a Psuedoaneurysm of the Profunda Femoris

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We describe a patient with an aggressive soft tissue sarcoma masquerading as a profunda femoris pseudoaneurysm. A 73-year-old patient presented with a pulsatile swelling in her right groin. Femoral angiography demonstrated what appeared to be a pseudoaneurysm of the right profunda femoris artery and she underwent an open surgical repair. The patient represented 2 months later with an enlarging non-pulsatile, non-tender mass at the site of the wound. Open biopsy determined the diagnosis as malignant fibrous histiocytoma (MFH). An en bloc *resection of the mass with reconstruction of the femoral artery and vein using PTFE grafts was performed.*

Keywords: Malignant fibrous histiocytoma; Pseudoaneurysm.

We describe a patient with an aggressive soft tissue sarcoma arising from a profunda femoris pseudoaneurysm. This unusual presentation considerably confounded both diagnosis and management and, thus, provides a salutatory clinical lesson.

Case Summary

A 73-year-old female patient presented with a painful, pulsatile swelling in her right groin. Duplex ultrasound and femoral angiography demonstrated what appeared to be a pseudoaneurysm of the right profunda femoris artery (Fig. 1). Although the lump had only recently become apparent, the patient had 6 years previously undergone a coronary artery angiogram using a right femoral approach. There was no other history of trauma. Due to the presumed chronicity of the pseudoaneurysm, she underwent open surgical repair. At operation, the surrounding tissues were found to be oedematous and adherent to the pseudoaneurysm sac. The pseudoaneurysm was therefore opened and the feeding vessels ligated. Samples of tissue were sent for culture and sensitivity (no growth), however, none were sent for histological examination.

The patient represented 2 months later with a large (12 by 6 cm), painless, non-pulsatile, non-tender mass at the site of the wound in her right groin and right lower limb swelling. Ultrasound, computerised tomogram (CT) (Fig. 2) and magnetic resonance imaging did not reveal any characteristic features other than a heterogeneous, soft tissue mass although repeat angiography did demonstrate considerable neovascularistaion present in the swelling (Fig. 3). Our suspicion of neoplasia was confirmed by ultrasound-guided fine needle aspiration cytology (FNAC) while open biopsy conclusively determined the diagnosis immunohistochemically as malignant fibrous histiocytoma (MFH). As abdominal and thoracic CT scans showed no evidence of metastatic disease, *en bloc* resection of the mass with reconstruction of the femoral artery and vein using PTFE grafts was performed.

Discussion

MFH is the most common adult soft tissue sarcoma, accounting for 1% of all adult malignant disease. Its histological features are, however, neither consistently

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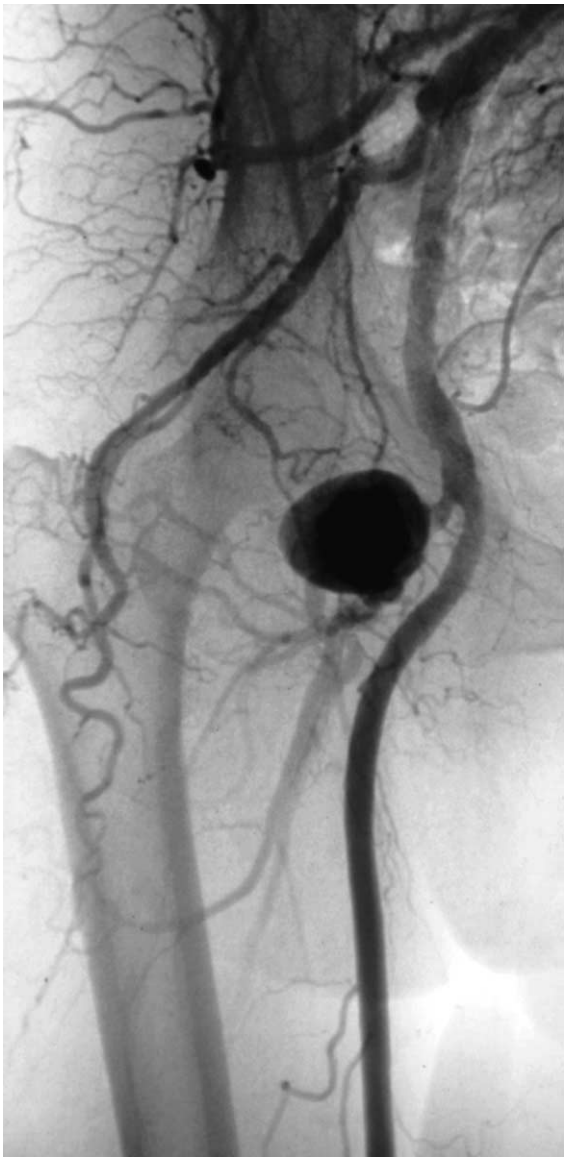

Fig. 1. Initial perfemoral angiogram demonstrating appearances consistent with a pseudoaneurysm of the profunda femoris artery.

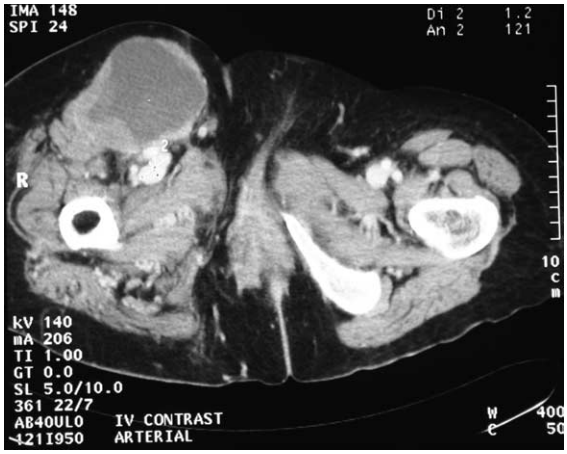

Fig. 2. Computerised tomogram (CT) of the patient's groin area performed on re-presentation after the initial surgery of her vascular abnormality. It demonstrates only a non-specific, heterogeneous mass in her right groin corresponding to her clinically apparent groin swelling.

reproducible nor distinguishable from other tumours subtypes. In fact, perhaps the only distinctive feature is a lack of distinctive features. As the putative cell of origin is the histiocyte, these tumours may arise in any tissue type including vascular structures[1] where they may replicate aneurysmal change.[2] The non-specific presentation and misleading or ambiguous radiological investigation may hamper diagnosis and delay appropriate management. As the prognosis of patients with MFH remains implicitly linked with the adequacy of their surgical resection,[3] the propensity for both limb salvage and long-term survival is limited.

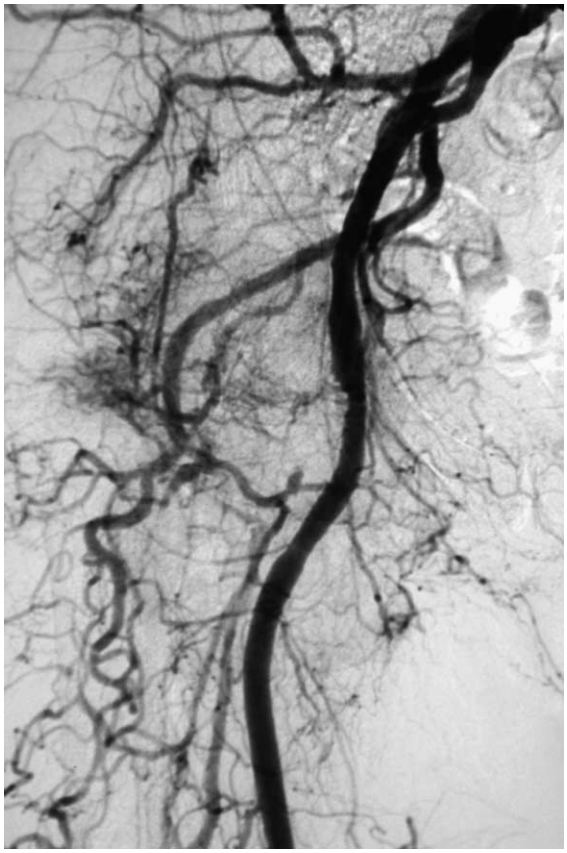

Fig. 3. Vascular blush suggestive of a neoplastic process in a perfemoral angiogram performed with digital subtraction after the CT shown in Fig. 2 (note: the profunda femoris artery was ligated at her initial operation).

Of particular interest in this case was the clinical and radiological presentation as a presumed traumatic pseudoaneurysm that delayed our realisation of the evolving neoplastic process. Although, the femoral artery catheterisation occurred many years previously, antecedent causation long before diagnosis has been reported previously.[4] Furthermore, pseudoaneurysms of the profunda femoris following femoral arterial puncture, while uncommon, have been previously described in association with imperfect catheterisation technique.[5] Superimposed infection of a previously injured profunda femoris arterial wall seemed the most likely diagnosis. Only after the true diagnosis became apparent did a literature search identify previous cases of soft tissue sarcomata presenting as aneurysms.[6] In retrospect, it is readily apparent that part of the specimen should have been sent for histological examination at the time of the first operation particularly given the somewhat atypical intraoperative findings encountered at this procedure.

In our patient's subsequent presentation, a combination of a misleading clinical picture and radiological findings further complicated the diagnosis. The initial postoperative ultrasonic appearances suggested a chronic, organised haematoma and so an initial period of expectant observation was decided upon. However, although her clinical course soon indicated that further action was required, subsequent imaging proved inconclusive. Furthermore, while fine needle aspiration was useful in proving the initial diagnosis of soft tissue tumour, it was poorly specific. Specific subtyping required multiple, formal biopsies as is a feature of MFH.[7]

As the incidence of local recurrence after treatment is high due to microscopic tumour deposits beyond apparently adequate resection margins, optimal management of MFH is wide surgical resection at the time of tumour presentation. As the malignant process in our patient involved both femoral vessels and femoral nerve, adequate resection mandated vascular reconstruction in order to allow salvage of the lower limb. Although radiotherapy can assist in achieving local control, it has limited influence on overall 5 and 10-year survival. Disappointingly, however, despite incorporation of modern chemo/radiotherapeutic strategies in their management, the prognosis of patients with MFH has not significantly improved over the past 20 years. Five and 10-year survival rates remain static at 65 and 59%, respectively.

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